

## PERSPECTIVES FROM THE CULTURAL HERITAGE RESOURCE VALUE MONITORING PILOT PROJECT

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Since 2006, the Forest and Range Evaluation Program (FREP) has been collaborating with several First Nations across British Columbia to develop a monitoring framework, data collection tools, and implementation strategy that will provide insight into the following question:

*Are cultural heritage resources being conserved, and where necessary protected for First Nations' cultural and traditional use as a result of forest practices in British Columbia?*



Message tree

Photo: Carl Pollard

This extension note describes pilot monitoring results to date, lessons learned, and key messages for forestry practitioners. Results from the 2009 field season will appear in future publications.

## GENERAL SCOPE OF FREP CULTURAL HERITAGE RESOURCE MONITORING

The cultural heritage resource (CHR) working group is an evolving collection of individuals from several organizations across the province that advises on the scope and direction of CHR stewardship monitoring under FREP. Past and current members include representatives from First Nations and First Nations organizations,<sup>1</sup> government agencies,<sup>2</sup> the Forest Research Extension Partnership (FORREX), and the Centre for Non-Timber Resources. First Nations collaboration at the planning, site selection, and field data collection stages is also integral to the CHR field monitoring protocol and is actively sought by MFR district staff in participating districts.

FREP CHR monitoring is currently limited to post-harvest assessment of the management effectiveness of known cultural heritage sites or features at the cutblock level. As the program evolves, the team hopes to explore more complex landscape-level cultural resource management issues (e.g., ensuring access to an abundance and diversity of plants for continued cultural use) and the potential for incorporating traditional knowledge into the monitoring framework.<sup>3</sup>

- 1 Haida Nation, T'silhqot'in National Government, Ulkatcho First Nation, Nak'azdli First Nation, Hupacasath First Nation, Esh-kn-am Cultural Resource Management, Upper Nicola Band, and the Nicola Tribal Association.
- 2 Ministry of Forests and Range (MFR) district and regional offices, Archaeology Branch of the Ministry of Tourism Culture and the Arts (MTCA), Integrated Land Management Bureau (ILMB).
- 3 See the following URL to access current CHR protocols and field data collection checklists: <http://www.for.gov.bc.ca/hfp/frep/indicators/table.htm#heritage>

### The FREP Mission:

To be a world leader in resource stewardship monitoring and effectiveness evaluations; providing the science-based information needed for decision-making and continuous improvement of British Columbia's forest and range practices, policies and legislation.

<http://www.for.gov.bc.ca/hfp/frep/index.htm>

A draft stewardship monitoring protocol and a field data collection form (“checklist”) were developed in early 2008. While recognizing the unique perspectives of individual First Nations, the working group identified several broad categories of commonly identified CHR or “indicators” that appeared to be provincially applicable. A list of more specific site types which fall under these categories was developed for inclusion on the field checklist and will be continuously updated as field experience grows (Table 1).

**Table 1: CHR indicators and site types**

CHR Indicator	Example of site or feature on CHR checklist
1. Culturally modified tree (CMTs)	Stand or individual CMT
2. Cultural use trail	Trapline, designated or undesignated cultural use trail
3. Traditional, ceremonial, and spiritual use sites or areas	Cedar bark strip area, bathing pool, cremation site, cave or karst feature
4. Ecological features with cultural significance	Den (bear, cougar, coyote), Nest (eagle, goshawk)
5. Cultural plants	Plant gathering site
6. Archaeological resources	Cache pit, pre-1846 CMT, burial site
7. Monumental cedar	Stand of monumental cedar

## 2008 CHR PILOT PROJECT SCOPE

Twenty cutblock-level pilot field assessments were completed in the summer and fall of 2008. District staff worked with First Nations representatives on approximately half of these field assessments.<sup>4</sup> All cutblocks were within the geographical boundaries of four pilot MFR districts: Chilcotin, Cascades, Fort St. James, and Haida Gwaii (Figure 1).

A total of 54 cultural heritage sites and features were assessed, including a small number of sites protected under the *Heritage Conservation Act*.<sup>5</sup> All sites were within or adjacent to cutblock boundaries. The most common site type encountered was culturally modified tree (CMT) stands (43%) containing between 2 to 301 CMTs (Table 2). Almost one-quarter of sites (24%) were either designated or undesignated cultural use trails, three of which were recorded as “composite features” or features which are adjacent to other CHRs (for example, a cultural trail with several adjacent CMTs).

<sup>4</sup> Representatives from the Haida Heritage and Forest Guardians, Lillooet Tribal Council, T’silhqot’in Stewardship Department, Ulkatcho First Nation, Tl’atzen First Nation, and Nak’azdli First Nation.

<sup>5</sup> All archaeological resources pre-dating 1846 and all burial sites and rock art (petroglyphs and pictographs).



**Figure 1. Map of British Columbia with 2008 CHR pilot forest districts highlighted in yellow.**

Individual or stands of monumental cedar were encountered on Haida Gwaii, and only one cultural plant gathering area was assessed.

**Table 2: Types of CHR sites or features**

CHR site or feature	# encountered in 2008 pilot sampling
Stand of CMTs	23
Cultural Trail (undesignated)	7
Individual monumental cedar	6
Individual CMT	5
*Composite sites	5
Cultural Trail (designated)	3
Bear den	2
Stand of monumental cedar	2
Cultural plant gathering area	1
<b>Total</b>	<b>54</b>

## 2008 FINDINGS AND LESSONS LEARNED

### Protocol refinements

One goal of the pilot was to test and refine the CHR monitoring protocol and field checklist which resulted in the following changes:

- Minor improvements to the field checklist to remove redundancies and improve ease of use, including expanding the original list of CHR site types;
- Establishment of a standardized site selection process including a mix of randomly selected and targeted blocks<sup>6</sup> harvested at least 2 years prior to field sampling;<sup>7</sup>
- Minor procedural clarifications of the pilot field protocol including the ability to assess CHR sites or features as “composite features” where they are in close proximity to each other and managed using the same strategy.

### Results

Field staff observed numerous strategies being used to manage CHRs (Table 3). In most cases, only one strategy was used to manage the feature but multiple strategies were sometimes combined, particularly where a site covered a large contiguous area or linear corridor (e.g., a cultural use trail or trapline). Approximately 83% of assessments determined that a management strategy had been used to manage known CHR features.

**Table 3: CHR Management strategies**

Management strategy used	Total sites where strategy was used	% of total
Modify block boundary to avoid the feature (site avoidance)	10	18.5
Multiple strategies used	10	18.5
None (no active management)	9	17
Conserve in protected or retention area	8	15
Date and stump some CMTs above scar	5	9
Retain a buffer around the site or feature	3	5.5
Date and stump all CMTs above scar	3	5.5
Retain feature with no buffer	2	4
Date and cut CMT	2	4
Stump all CMTs above scars	2	4
<b>Total</b>	<b>54</b>	

Site avoidance through modification of the original block boundary was a relatively common strategy (approximately 20% of sites). Stumping or stubbing of CMTs was also

6 Random sampling minimizes sampling bias and ensures that data on provincial trends is objectively reported (Bergerud 2004). Targeted sampling ensures that sites of special concern to First Nations or sites with significant cultural value will be captured in the sampling process.

7 Similar to the FREP Riparian protocol to ensure post-treatment conditions are captured (Tripp et al. 2009).

regularly used to decrease the risk of windthrow damage and (or) retain evidence of the feature (26% of sites), and was sometimes combined with protection of the trees in a retention area. In several cases where large stands of CMTs were found, a portion or representative sample of the CMTs were stubbed and left on the block, while others were cut and removed.

Approximately half of CHR sites assessed in 2008 showed no post-harvest impacts. In the other half of cases where damage to or removal of CHR sites or features was recorded, the majority of which post-dated 1846, assessors noted that operationally feasible options were often available and could have led to more effective conservation or protection of CHRs.

In approximately 17% of cases (9 sites), no management strategy was used to conserve or protect known CHRs. Damage to 5 of these sites/features was evident and two previously documented sites/features could not be found in the field.

### Discussion

A number of key issues appeared to be contributing to CHR site damage. Further monitoring will be required to determine whether these reflect widespread regional or provincial trends.

#### Windthrow risk in mountain pine beetle affected areas

Dead trees affected by mountain pine beetle (MPB) will fall to the ground within 5 to 20 years resulting in elevated windthrow levels in heavily affected stands across the B.C. Interior (Waterhouse and Armleder 2004). Common strategies for CHR management in many of these areas include buffer retention or establishment of machine-free zones around CHR sites and (or) conservation of the cultural feature in retention areas (e.g., wildlife tree patch). Particularly along stand edges and where MPB related tree mortality is high, pilot results suggest that these traditional approaches may pose an increased risk of damage to CHRs in some cases. For example, during one FREP assessment, staff could no longer identify the CHR site because windthrown trees originally retained as a buffer completely covered the site. In another, the majority of CMTs originally conserved in a wildlife tree patch had blown down. In comparison, on a number of cutblocks where MPB mortality was high, CMTs and other trees in retention areas were stubbed above the scar and remained standing.

These results warrant further professional dialogue and consideration of alternative management options (e.g., stumping, feathering, enhanced retention) in some cases where MPB-related mortality is high.



Stubbing of CMTs along cultural trail  
Photo: Carl Pollard

## Innovation in Cultural Trail management

To minimize rutting and erosion from logging activities, one proponent installed geotextile fabric and corduroy road surfaces before and during harvesting and road building where new roads intersect an important cultural use trail. These protections were then removed after harvest. In combination with a 5m machine-free zone on either side of the trail, and modification of the block boundary to avoid sections of the trail, the strategies were effective at minimizing damage to the trail.

## Communication

When CHR strategies are put in place at the planning phase, it is critical to communicate both these strategies and CHR site locations to all individuals involved in harvest layout, road-building, harvesting, and post-harvest operations. Pilot results demonstrate that CHRs protected through careful planning and (or) harvesting can be easily damaged by subsequent operations including salvage harvesting or silviculture when communication is lacking. For example, one FREP assessment revealed irreversible damage to a cultural trail caused by destumping for *Armillaria* root rot control and subsequent planting which rendered the trail bed unidentifiable. In another, the original buffer intended to conserve a CHR site was salvage harvested and subsequent windthrow damaged the site. Adequately informing all operators about the presence, nature and location of CHRs can help to improve site conservation and protection.

## Cultural Plants

Active management of cultural plant communities through the strategic placement of wildlife tree patches, enhanced retention along water bodies or high use gathering areas, selective logging, or other strategies, was uncommon in 2008 pilot cutblocks. Resource managers require reliable data sources and tools to assist in identifying, maintaining, and enhancing the variety of habitats needed to sustain plant communities in accessible areas at a landscape scale and (or) knowledge of gathering site locations of importance to local First Nations. This data is currently very limited and concerns about confidentiality and intellectual property rights continue to hinder the sharing of existing information with other resource managers. The combined impacts of a shifting climate and cumulative impacts of resource development, including high rates of salvage harvesting in areas heavily affected by MPB, are compounding these challenges as the reliability of traditional plant gathering areas becomes increasingly suspect. Considerably more research is required to determine how managers can best conserve an adequate quantity and quality of cultural plants for continued First Nations' cultural use.

## Quality and Availability of Cultural Heritage Resource Information

In order to minimize the risk of loss or damage to CHR sites during forestry operations or other development activities, accurate and accessible documentation of CHR sites is critical. On several occasions, FREP field teams encountered previously unrecorded CHR sites in the field that may have been unknown to managers and decision makers at the time of harvest. This highlights the importance of ensuring thorough documentation of CHR information by well trained and skilled practitioners in order to minimize risk of damage to CHR sites.

Provincial documentation standards and permitting requirements exist for the management of archaeological resources automatically protected or designated under the *Heritage Conservation Act*. All protected sites identified under permit through the archaeological impact assessment (AIA) process must be registered and documented in the Provincial Heritage Inventory. Data recorded about other CHRs are not stored in the provincial inventory and can be held by multiple parties (First Nations, proponents and government agencies) in multiple formats.



There is an increasing trend towards documenting cultural sites through preliminary field reconnaissance (PFR) or similar pre-harvest CHR assessments in lieu of the AIA process. PFR does not require a permit and does not need to be completed by a professional archaeologist. PFR or similar inventory work should be completed by well-trained and knowledgeable cultural heritage resource management practitioners using best practices recommended by the B.C. Archaeology Branch.<sup>8</sup> These include the use of professional recording and reporting standards and submission of all archaeological site information to the B.C. Archaeology Branch.

## KEY OPPORTUNITIES TO IMPROVE CHR MANAGEMENT

Based on field observations of what worked well and where improvements were possible, the following opportunities exist to improve CHR management:

- Ensuring proper pre-harvest documentation of the nature and location of all CHR sites, including GPS coordinates, by professional archaeologists or properly trained and experienced cultural resource management practitioners following established provincial standards;
- Avoiding identified sites or features where operationally feasible to do so (e.g., avoid small stands of CMTs);
- Consistently applying trail management strategies along the entire length of a cultural trail versus portions of the trail;
- If a cultural trail cannot be avoided, clearing debris from trails, cultural use areas, or other culturally significant features after harvest to ensure continued access to the site;
- Conserving known high-quality and high use cultural plant gathering areas through enhanced retention, particularly in areas easily accessible to community members;
- Considering the feasibility of using retention in combination with stubbing of CMTs to lower windthrow risk in areas heavily affected by mountain pine beetle where windthrow risk is high;
- Focusing retention areas and reserves (e.g., wildlife tree patches) immediately next to a CHR feature and retain a sufficient windfirm buffer around identified features to minimize risk of windthrow damage;
- Ensuring that the location of CHR sites and all associated management recommendations are well documented and communicated to all operators. Opportunities include:

- Ensuring that accurate CHR site locations and management strategies are included in documents accessible to all operators wherever possible (e.g., in harvest inspection form, site plans, silviculture prescriptions, etc.)
- Discussing CHR concerns, site locations and management strategies during detailed pre-work meetings with all operators;
- Clearly demarcating CHR sites in the field for all harvest and post-harvest operators (e.g., ribboning, stumping of trees along trails or other features, painting marker trees where locally acceptable, etc.)

### Why evaluate blocks harvested under the Forest Practices Code?

The results-based *FRPA* came into effect in 2004, marking the transition from the Forest Practices Code established in 1995 (the “Code”). The transition period varied across the province, and cutblocks were still harvested under Code regulations as late as 2007. Results from cutblocks harvested under the Code can be used as a baseline against which more recent data from *FRPA* cutblocks can be compared, revealing trends in CHR management over time. Data from all cutblocks are valuable for informing dialogue among professionals and developing guidance on best management practices for various types of CHRs.

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<sup>8</sup> Best practices for completing PFR are available at: [http://www.tca.gov.bc.ca/archaeology/docs/PFR\\_Best\\_Practices.pdf](http://www.tca.gov.bc.ca/archaeology/docs/PFR_Best_Practices.pdf)